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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/891,655	06/27/2001	Masahide Mohri	Q51805	4405
7590 03/02/2004 SUGHRUE, MION, ZINN, MACPEAK & SEAS 2100 Pennsylvania Avenue, N.W. Washington, DC 20037			EXAMINER BOS, STEVEN J	
			ART UNIT 1754	PAPER NUMBER

DATE MAILED: 03/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/891,655

Applicant(s)

MOHRI ET AL. 

Examiner

Steven Bos

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4-28,31 and 32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-28,31 and 32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 1 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for "zirconium dioxide having a number average particle size of 40 microns", does not reasonably provide enablement for any metal oxide except alpha alumina having a number average particle size of 40 microns or less. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims. Instant example 21 and Table 3 only support zirconium dioxide having a number average particle size of 40 microns.

Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claim 1, "40  $\mu$ m or less" is new matter.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,4-6,11-13,20,23,24,26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jodden '163.

Jodden teaches the claimed process of calcining titanium oxide or precursor thereof in an atmosphere of chlorine gas (see the examples and claims). Since Jodden teaches the instantly claimed process the instantly claimed product would also be formed.

The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, *In re Malagari*, 182 USPQ 549.

Where the claimed and prior art product(s) are identical or substantially identical, or are produced by identical or substantially identical process(es) the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or inherently

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possess the characteristics of the instantly claimed product(s), see *In re Best*, 195 USPQ 430.

Claims 1,4-8,11-13,20,23,24,26-28,31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pastor '656.

Pastor teaches the instantly claimed process of calcining metal oxide powders in an atmosphere of halogen gas (see the examples and claims). Since Pastor teaches the instantly claimed process the instantly claimed product would also necessarily be formed.

The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, *In re Malagari*, 182 USPQ 549.

Where the claimed and prior art product(s) are identical or substantially identical, or are produced by identical or substantially identical process(es) the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or inherently possess the characteristics of the instantly claimed product(s), see *In re Best*, 195 USPQ 430.

Claims 1,4-10,13,15,16,18-20,22-24,26-28,31,32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brackelsberg '258.

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Brackelsberg suggests the instantly claimed process of heating iron and manganese ores, ie. metal oxide precursors, in HCl or chlorine gas and steam, to form iron oxide or manganese oxide. See cols. 2,3. Since Brackelsberg suggests the instantly claimed process the instantly claimed product would also be formed.

The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, *In re Malagari*, 182 USPQ 549.

Where the claimed and prior art product(s) are identical or substantially identical, or are produced by identical or substantially identical process(es) the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or inherently possess the characteristics of the instantly claimed product(s), see *In re Best*, 195 USPQ 430.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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Claims 1,4-28,31,32 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11 of U.S. Patent No. 6303091. Although the conflicting claims are not identical, they are not patentably distinct from each other because they overlap in scope of subject matter claimed. It would have been obvious to recover the instantly claimed product from the taught process.

Claims 1,4-10,13-28,31,32 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 of U.S. Patent No. 5736111. Although the conflicting claims are not identical, they are not patentably distinct from each other because they overlap in scope of subject matter claimed. It would have been obvious to recover the instantly claimed product from the taught process.

Claims 1,4-28,31,32 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-23 of U.S. Patent No. 5688480. Although the conflicting claims are not identical, they are not patentably distinct from each other because they overlap in scope of subject matter claimed.

Claims 1,4-28,31,32 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 of U.S.

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Patent No. 5840267. Although the conflicting claims are not identical, they are not patentably distinct from each other because they overlap in scope of subject matter claimed. It would have been obvious to recover the instantly claimed product from the taught process.

Claims 1,4-10,13-28,31,32 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 of U.S.

Patent No. 5846505. Although the conflicting claims are not identical, they are not patentably distinct from each other because they overlap in scope of subject matter claimed. It would have been obvious to recover the instantly claimed product from the taught process.

Applicant's arguments filed December 23, 2003 have been fully considered but they are not persuasive.

Applicant argues that applicants have provided ample examples for the metal oxide and refers to various metal oxides and examples and Tables 1-4 therefore. Further it is argued that all of the examples show a number average particle size of 40  $\mu\text{m}$  or less.

However instant claim 1 is of much broader scope and nowhere in the instant examples and tables is it recited that all of the metal oxides except alpha alumina have a number average particle size of 40  $\mu\text{m}$  or less. Zirconium oxide is the only metal oxide that even recites a number average particle size of 40  $\mu\text{m}$ . Of course this does



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not even support the instantly claimed "40  $\mu\text{m}$  or less" because it only supports the one size of 40  $\mu\text{m}$ .

Applicant argues that all the examples show a number average particle size of 40  $\mu\text{m}$  or less in Tables 1-4 including various metal oxides and that example 21 ( $\text{ZrO}_2$ ) shows a number average particle size of 40  $\mu\text{m}$  (Table 3).

However the recitation of 40  $\mu\text{m}$  cannot support the instantly claimed "40  $\mu\text{m}$  or less" because 40  $\mu\text{m}$  can only support 40  $\mu\text{m}$ .

Applicant argues that the present process uses a metal oxide powder having an average particle size of 0.1  $\mu\text{m}$  or less and the number average particle size of the product is 40  $\mu\text{m}$  or less and that it is not appropriate to conclude that the metal oxide powder of Jodden would have the same particle size as that claimed in the present application, on the basis that the process of Jodden is assertedly similar to the process of the present process.

However the instant process claims do not require such a small raw material particle size and Jodden does suggest the instantly claimed process which does not even require any raw material particle size. Applicant's arguments are not commensurate in scope with the instant process claims which do not require a particle size for the metal oxide precursor.

Applicant argues that Pastor teaches an entirely different process from the process of the present invention and that the examples of Pastor do not teach titanium oxide, zirconium oxide or their precursors and that Pastor does not teach, suggest or

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appreciate the advantages of D10, D90 and a D90/D10 ratio and a ratio of an agglomerated particle size to a primary particle size.

However the instant claims are not so limited. Also, the examples of Pastor teach the instantly claimed process of calcining, ie. heating at 1000°C, a non alpha alumina powder, eg. silica, germanium dioxide, lanthanum oxide, etc., in molecular halogen, eg. chlorine. The taught process would produce the instantly claimed product.

Applicant argues that Brackelsberg does not disclose or suggest the size of the raw material and that the instantly claimed invention has a raw material average particle size of 0.1  $\mu\text{m}$  or less therefore it would not be appropriate to conclude that the metal oxide powder of Brackelsberg would have the same particle size as that instantly claimed.

However these arguments are not commensurate in scope with the instant method claims which do not even require a raw material particle size, therefore the argument is unpersuasive.

Applicant argues that claims 1-11 of '091 do not disclose or suggest 1) various metals or 2) a fluorine gas or a molecular halogen and steam, as presently claimed.

However none of the independent claims 1,11,13,32 require either of these two limitations which renders the argument unpersuasive as it is not commensurate in scope with the instant claims.

Applicant argues that claims 1-6 of '111 do not teach or suggest 1) a method for making a simple metal oxide, 2) an oxide of titanium or cerium, 3) a seed crystal, 4)

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density of the raw material, 5) a fluorine gas, a hydrogen fluoride gas, or a molecular halogen and steam as presently claimed.

However none of the independent claims 1,13,32 require any of these limitations which renders the argument unpersuasive as it is not commensurate in scope with the instant claims. Instant claims 11,12 require titanium oxide and this claim has been withdrawn from the ODP rejection over '111.

Applicant argues that claims 1-23 of '480 relate to a method of making a complex metal oxide powder and do not teach or suggest a method for producing a simple metal oxide.

However the instant claims are not so limited to a simple metal oxide but are broad enough to include the taught complex metal oxides.

Applicant argues that claims 1-6 of '267 is a method for producing a metal oxide by heating a metal or metals in a halogen gas whereas the instant claims are directed to a method for a metal oxide by heating a metal oxide or metal oxide precursor powder in a halogen atmosphere.

However the taught heated metal or metals are seen to be metal oxide precursors because '267 forms metal oxides using the metal or metals as raw material.

Applicant argues that claims 1-7 of '505 produce a double metal oxide and that '505 does not teach or suggest 1) a method of making a simple metal oxide, 2) cerium oxide, 3) a seed crystal, 4) density of the raw material, 5) a fluorine, a bromine, etc.

However none of the independent claims 1,13,32 require any of these limitations which renders the argument unpersuasive as it is not commensurate in scope with the

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instant claims. Instant claims 11,12 require titanium oxide and this claim has been withdrawn from the ODP rejection over '505.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

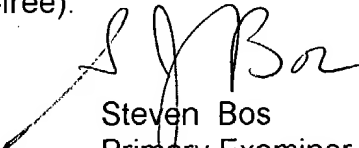
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Bos whose telephone number is 571-272-1350. The examiner can normally be reached on M-F, 8AM-6PM but is on increased flexitime sch.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Steven Bos  
Primary Examiner  
Art Unit 1754

sjb